REMARKS

By this Amendment, claim 21 is amended in accordance with the Examiner's request and to further clarify the recited subject matter. Claims 1-30 are pending.

The Office Action rejected claims 1-16 and 19-20 as being obvious under 35 U.S.C. 103(a) based on Kudoh et al. (US 5,414,702; hereafter "Kudoh"), rejected claims 17 and 18 under 35 U.S.C. 103(a) as being obvious from Kudoh in view of Jeon and Duault et al. (US 5,930,265; hereafter "Duault"), and rejected claims 21-30 under 35 U.S.C. 103(a) as being unpatentable over Kudoh in view of Jeon and Nakakita et al. (U.S. 6,061,820; hereafter "Nakakita"). Applicant traverse the rejections because Kudoh, analyzed individually or in combination with other cited prior art references, fails to disclose, teach or suggest all the features recited in the rejected claims. For example, the cited prior art Kudoh, analyzed individually or in combination with the other cited prior art, fails to disclose, teach or suggest the claimed data segmentation methods including (independent claims 1, 8 and 15), telecommunications system (independent claims 10, 14, and 16), mobile station (independent claims 17 and 18), network element (independent claims 19 and 20) and apparatus (independent claims 21 and 26), wherein larger data units of a higher layer are segmented into smaller protocol data units of a lower layer so that *each lower layer protocol data unit includes one or more data segments each containing data from a different one of the upper layer data units;* and wherein the lower layer protocol data units *contain two or more data segments, with segmentation length information* which otherwise indicates length of the data segments; and wherein predetermined values of the segmentation length information are used to indicate *special information about the higher level protocol data units instead of the length of the segments.*

Applicant again directs the Examiner's attention to the fact that all of the pending claims recite that a lower layer PDU contains two or more data segments of higher layer data units. However, the Office Action has summarily ignored that each of the claims relates to lower layer protocol data units which each contain two or more data segments from two or more different higher layer data units, with special information about the higher level protocol data being indicated by predetermined values segmentation length information which otherwise would indicate length of the data segments.

Nevertheless, Applicant maintains that Kudoh fails to teach or suggest this feature because in Kudoh, the payload information from the frame shown at the top of Figure 3 is

segmented into lower layer PDUs by a two-step procedure. First, the frame encapsulated into a convergence (cs) sublayer PDU, which included the header CSH and the trailer CSH indicating the start and stop of the higher layer frame. The CS-PDU is further subdivided into segmentation and reassembly (SAR) sublayer PDUs which are provided with a header SARH and a trailer SART. Each SAR-PDU contains information from only one CS PDU or from only one higher layer frame. Each SAR-PDU is inserted to one ATM cell.

As recognized by the Office Action, a single layer protocol data unit cannot contain two or more data segments which contain data from different layer data units. Thus, Kudoh fails to teach or suggest a lower layer PDU which contains two or more data segments of the higher layer data units.

Although the Office Action asserts that the combined information of LI and ST fields in the SAR-PDU corresponds to the segmentation length information, which would indicate length of the data segments, the length information LI indicates the length of SAR-PDU without padding; the purpose of that information being to indicate the effective length of the ATM cell in the ATM layer. Thus, contrary to the assertions of the Office Action, the length information LI merely indicates the effective length of the data field in the SAR-PDU. LI does not give any information about the higher layer frames.

Further, the reference symbol ST denotes a segment type by which each of the cells transmitted after the division of the CS sub-layer protocol data unit CS-PDU into cells is to be positioned, i.e., whether the cell starts (BOM), continues (MID) or ends (EOM) a higher layer message (see, col. 3, lines 51-58; column 6, lines 15-26).

Thus, Kudoh actually teaches away from the claimed invention by teaching use of a special-purpose field in each SAR-PDU to indicate whether a higher layer message starts, ends or continues. Accordingly, Kudoh teaches away from the claimed invention wherein the segmentation length information is used in the lower layer protocol data units containing two or more data segments to indicate information about higher level protocol data units instead of the length of the segments or the effective length of the data field, in order to avoid such extra fields and the resulting signaling overhead (see page 3, lines 4 to 14 in the present application).

As also recognized by the Office Action, Kudoh also fails to teach or suggest indicating with predetermined values of segmentation length information, special information about the higher level protocol data units instead of the length of the segments at least in the lower layer protocol data units containing two or more data segments, and the step of

assembling the segmented higher level data unit at the receiving end by means of the segmentation length information.

However, the Office Action looked to Jeon to remedy these deficiencies and has asserted that the modified teachings of Kudoh (in accordance with Jeon) would remedy this feature.

Nevertheless, Jeon merely discloses a connectionless server for an ATM network, see, col. 1, lines 54-67 and col. 2, lines 1-16, which teach a similar arrangement as that of Kudoh for segmenting CPCS (Common Part Convergence Sublayer) PDUs into segmentation and reassembly (SAR) sublayer PDUs. As can be readily seen from Fig. 3 of Jeon, each SAR-PDU contains information from only one CS PDU or from only one higher layer frame. Each SAR-PDU is inserted to one ATM cell. Jeon also teaches that ST (Segment Type) information is inserted into each SAR-PDU to indicate whether the cell starts, continues or ends a higher layer message. Therefore, Kudoh, analyzed individually or in combination with Jeon, fails to teach or suggest the claimed invention because both cited prior art references use a special-purpose field in each SAR-PDU to indicate a higher whether a higher layer message starts, ends or continues.

As a result, Jeon fails to remedy the deficiencies of Kudoh and their combined teachings fail to provide the claimed invention wherein lower layer protocol data units each contain two or more data segments from two or more different higher layer data units, with special information about the higher level protocol data being indicated by predetermined values segmentation length information which otherwise would indicate length of the data segments. Therefore, Kudoh in view of Jeon would not have resulted in the subject matter of claims 1-16 and 19-20.

Claims 1-16 and 19-20 are not obvious form Kudoh in view of Jeon.

Similarly, Duault fails to remedy the deficiencies of Kudoh and Jeon because Duault merely teaches a conventional data processing system and method of communicating using mobile voice data with ATM network.

As a result, Duault fails to remedy the deficiencies of Kudoh and Jeon and their combined teachings fail to provide the claimed invention wherein lower layer protocol data units each contain two or more data segments from two or more different higher layer data units, with special information about the higher level protocol data being indicated by predetermined values segmentation length information which otherwise would indicate

length of the data segments. Therefore, Kudoh in view of Jeon and Duault would not have resulted in the subject matter of claims 17-18.

Further, Nakakita fails to remedy the deficiencies of Kudoh and Jeon because Nakakita merely teaches convention cell assembling apparatuses. As a result, Nakakita fails to remedy the deficiencies of Kudoh and Jeon and their combined teachings fail to provide the claimed invention wherein lower layer protocol data units each contain two or more data segments from two or more different higher layer data units, with special information about the higher level protocol data being indicated by predetermined values segmentation length information which otherwise would indicate length of the data segments. Therefore, Kudoh in view of Jeon and Nakakita would not have resulted in the subject matter of claims 21-30.

All rejections and objections having been addressed, it is respectfully submitted that the present application is now in condition for allowance, and a notice to that effect is earnestly solicited. Should there be any questions or concerns regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,
PILLSBURY WINTHROP SHAW PITTMAN LLP

CHRISTINE H. MCCARTHY
Reg. No. 41844
Tel. No. 703 770.7743
Fax No. 703 770.7901

Date: February 6, 2007
P.O. Box 10500
McLean, VA 22102
(703) 770-7900